

Ideas of new technological developments for future French SLR stations

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To answer to the new scientific objectives in Geodesy (GGOS), in Oceanography and in Fundamental Physics (Time-Transfer, General-Relativity), we have to adapt the performances of SLR stations. With the support of the CNES (Centre National d'Etudes Spatiales), we are studying about new technological developments before the preliminary design of a new SLR station.

In this presentation, we will introduce three axis of developments concerning the three scientific domains cited above:

- Improvements of the metrological performances

Our goal is to approach the millimeter accuracy by using two-color laser telemetry at high repetition rate. We will describe our upcoming experiments on visible and infrared detectors.

- Automation and security

In-sky safety becomes increasingly important for computerizing laser observations. We will report a first algorithm of image processing used to detect objects without transponder like small airplanes or paragliders.

- Improvement of tracking performances at zenith

Compared to other geodetic technics, SLR gives a real contribution for observations at very high elevation. However, the stations equipped with Alt-Az mount like MéO can show a deficit of observations at zenith (mainly for low-altitude satellites). We will compare the Alt-Az solution with other sort of telescope mounts.